



This document includes Section 20.0, Compression Ignition Powered Vessels less than 65 feet in Length, of the Draft EPA Report "Surface Vessel Bilgewater/Oil Water Separator Environmental Effects Analysis Report" published in 2003. The reference number is: EPA-842-D-06-018

DRAFT
Environmental Effects Analysis Report
Surface Vessel Bilgewater/Oil Water
Separator

Section 20.0 – Compression Ignition Powered Vessels Less
than 65 Feet in Length

2003

DRAFT

ENVIRONMENTAL EFFECTS ANALYSIS REPORT

SURFACE VESSEL BILGEWATER/ OIL WATER SEPARATOR (OWS)

***Vessel Group: Compression Ignition Powered Vessels less
than 65 feet in Length (UTB 41)***

Prepared by:

Naval Sea Systems Command
U.S. Department of the Navy

Office of Water
U.S. Environmental Protection Agency

**Environmental Effects Analysis Report on
Surface Vessel Bilgewater/Oil Water Separator Discharge (OWS)
Compression Ignition Powered Vessels less than 65 feet in Length (UTB 41)**

1.0 Introduction

The bilge of a surface ship is the lowest inner part of the hull where liquid drains from the interior spaces and the upper areas of the vessel (EPA and DoD, 1999). All vessels generate bilgewater and most commissioned Armed Forces vessels are fitted with oil/water separator (OWS) systems designed to reduce the oil content of the discharge to 15 mg/L or less (in accordance with OPNAVINST 5090.1B).

Vessels in this group receive fluids in the bilge from condensation that forms on the interior hull, from leaking propeller shafts, pump packing glands, piping, valves, and flanges. This fluid may be contaminated with oily substances used to power and lubricate the propulsion and auxiliary engines.

This Environmental Effects Analysis Report (EEAR) evaluates surface vessel bilgewater discharge from the UNDS vessel group, “Compression Ignition Powered Vessels less than 65 feet in Length.” This group is composed of approximately 1,600 vessels distributed across approximately 150 vessel classes, including patrol craft, landing craft, rigid inflatable boats, buoy tenders, harbor tugs, non-standard boats, and utility boats. The Coast Guard 41-ft utility boat class (UTB 41) was selected as the representative vessel class. This vessel class has 152 boats, the highest number of any class within the group, and accounts for approximately 10 percent of the total number of boats in the group. For more information about the vessel group and the selection of the representative vessel class used in this environmental effects analysis (EEA), see *Vessel Grouping and Representative Vessel Class Selection for Surface Vessel Bilgewater/Oil-Water Separator Discharge* (EPA and DoD, 2000c).

The following MPCDs passed the screening process, described in the *Marine Pollution Control Device Screen Criteria Guidance* (EPA and DoD, 2000b), and were determined to be viable options in the feasibility analysis for the vessel group (see the *Feasibility Impact Analysis Report Surface Vessel Bilgewater*, hereafter referred to as the Bilgewater FIAR) (EPA and DoD 2002b):

- Filter Media (EPA and DoD, 2001b)
- *In situ* biological treatment (EPA and DoD, 2001a)
- Collection, Holding, and Transfer (CHT) (EPA and DoD, 2001c)

2.0 Differences from the EEA Methodology

The analysis of discharge information and the presentation of results in this report do not follow the methodology contained in *Environmental Effects Analysis Guidance for Phase II of the Uniform National Discharge Standards for Vessels of the Armed Forces* (EPA and DoD, 2000a). The rationale for deviating from the established methodology is described below.

As determined in the Bilgewater FIAR (EPA and DoD, 2002), the CHT option is a feasible MPCD for this vessel group (CHT is currently in use for this vessel group). Application of this MPCD option involves shore-side treatment of collected bilgewater at an NPDES-permitted facility, and thus results in no discharge of untreated bilgewater to the receiving waters. When this report was written, EPA and DoD anticipated that the level of analysis in this report would be sufficient to support choosing an appropriate MPCD performance standard for the UTB 41 vessel group because CHT is expected to be the preferred option when applying the seven considerations under the Section 312(n) of the Clean Water Act (Navy and EPA, 2002).

3.0 Summary of EEA Results

There are only minimal anticipated impacts to receiving waters if CHT is conducted appropriately. There will be no toxic constituents, conditions related to narrative water quality criteria (e.g., turbid water), non-indigenous species, or bioaccumulative contaminants of concern introduced directly to the receiving water. The only potential impact to the environment identified for this MPCD would result from the discharge of treated bilgewater from an NPDES-permitted facility.

4.0 MPCD Ranking and Associated Uncertainty

CHT is the preferred option for this vessel group because it is assumed to have the least environmental impact when compared to the other MPCD options. There may be uncertainty in this limited analysis in regard to how much, if any, bilgewater is mishandled during transfer. However, because process knowledge of pierside management indicates mishandling is not a common occurrence, a determination of the frequency of this occurrence and associated uncertainty was not performed. Regardless of this minor aspect of uncertainty, CHT is the preferred option due to its minimal impact on the environment.

5.0 References

EPA and DoD. 1999. Phase I Uniform National Discharge Standards for Vessels of the Armed Forces: Technical Development Document. U.S. Environmental Protection Agency, Office of Water, Washington DC and U. S. Department of Defense (DoD). EPA 821-R-99-001. April 1999.

EPA and DoD. 2000a. Environmental Effects Analysis Guidance for Phase II of the Uniform National Discharge Standards for Vessels of the Armed Forces. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. November 2000.

EPA and DoD. 2000b. Marine Pollution Control Device Screen Criteria Guidance. U.S. Environmental Protection Agency, Office of Water, Washington, DC and U.S. Navy, Naval Sea Systems Command, Washington, DC. November 2000.

EPA and DoD. 2000c. Vessel Grouping and Representative Vessel Class Selection for Surface Vessel Bilgewater/OWS Discharge. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. November 2000.

EPA and DoD. 2001a. Aqueous Film Forming Foam, Submarine Bilgewater, and Surface Vessel Bilgewater MPCD Screen-Control Device, MPCD Option Group: *In Situ* Biological Treatment. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. February 2001.

EPA and DoD. 2001b. Submarine Bilgewater and Surface Vessel Bilgewater MPCD Screen-Control Device, MPCD Option Group: Filter Media. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. May 2001.

EPA and DoD. 2001c. Surface Vessel Bilgewater MPCD Screen-Control Device, MPCD Option Group: Collection, Holding, and Transfer. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. January 2001.

EPA and DoD. 2002. Feasibility Impact Analysis Report Surface Vessel Bilgewater. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and U.S. Navy, Naval Sea Systems Command, Washington, DC. 2002.

Navy and EPA. 2002. Benefits in employing CHT MPCD option. Memorandum to file, Phase II Uniform National Discharge Standards Program. 16 May 2002.